

Serial Number: 09/964,994
Filed: September 26, 2001

REMARKS

Claims 1-52 remain pending in the application for consideration. Claims 1-17 are under consideration subject to Applicants' restriction requirement election. Applicants have herein cancelled Claims 1-52 and added new Claims 53-69 so as to more clearly define the subject matter claimed therein. In that the newly added claims do not introduce new subject matter and are supported in the specification as originally filed, their entry is respectfully requested. Specification support for the newly added Claims 53-69 can be found at least as follows: page 2, lines 14-22, 25-27; page 3, lines 1-37; page 4, lines 1-12, 24-36; page 6, lines 31-37; page 7, lines 1-35; page 8, lines 8-20; page 9, lines 26-30; page 18, lines 1-4; page 52, lines 28-37; and EXAMPLES 1, 11, 12 and 13; and the claims as originally filed.

Information Disclosure Statement

Applicant has been invited to submit a new PTO-1449 form listing the foreign patent documents, with dates listed, for consideration. A new PTO-1449 form is herein submitted listing the missing dates which were previously inadvertently omitted.

Objections and Rejections under 35 U.S.C. §112 Second Paragraph

Claims 4, 9, 10, 11, 12, 16 and 17 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Without necessarily agreeing with the propriety of the rejection, Claims 1-52 have been cancelled and new Claims 53-69 have been added so as to more clearly define the subject matter. The newly added claims correct typographical errors in originally filed Claims 4, 9, 10 and 16. In light of newly added Claims 53-69, Applicants respectfully submit that the indefinite rejection of original Claim 17 has been overcome. In addition, the Examiner has objected to the recitation of "stringent conditions" in Claims 11 and 12, without reciting specific conditions in the original claims. Accordingly, newly added Claims 64-65 have been amended to indicate the specific stringent hybridization conditions. In light of the amendment to the claims and the discussion above, Applicants respectfully request reconsideration and withdrawal of the outstanding

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rejections under 35 U.S.C. §112 second paragraph.

Objections and Rejections under 35 U.S.C. §101

Claims 1-17 stand rejected under 35 U.S.C. §101 for allegedly lacking a credible, specific and substantial asserted utility or a well established utility. In light of the claim amendments made herein and for the reasons set forth below, Applicants respectfully traverse.

Utility – Legal Standard

According to the Utility Examination Guidelines ("Utility Guidelines"), 66 Fed. Reg. 1092 (2001) an invention complies with the utility requirement of 35 U.S.C. § 101, if it has at least one asserted "specific, substantial, and credible utility" or a "well-established utility." Under the Utility Guidelines, a utility is "specific" when it is particular to the subject matter claimed. For example, it is generally not enough to state that a polypeptide is useful as a diagnostic without also identifying the condition that is to be diagnosed. The requirement of "substantial utility" defines a "real world" use, and derives from the Supreme Court's holding in *Brenner v. Manson*, 383 U.S. 519, 534 (1966) stating that "The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility." In explaining the "substantial utility" standard, M.P.E.P. 2107.01 cautions, however, that Office personnel must be careful not to interpret the phrase "immediate benefit to the public" or similar formulations used in certain court decisions to mean that products or services based on the claimed invention must be "currently available" to the public in order to satisfy the utility requirement. "Rather, any reasonable use that an applicant has identified for the invention that can be viewed as providing a public benefit should be accepted as sufficient, at least with regard to defining a "substantial" utility." (M.P.E.P. 2107.01, emphasis added.) Indeed, the Guidelines for Examination of Applications for Compliance With the Utility Requirement, set forth in M.P.E.P. 2107 II (B) (1) gives the following instruction to patent examiners: "If the applicant has asserted that the claimed invention is useful for any particular practical purpose . . . and the assertion would be considered credible by a person of ordinary skill in the art, do not impose a rejection based on lack of utility."

Finally, the Utility Guidelines restate the Patent Office's long established position that any asserted utility has to be "credible." "Credibility is assessed from the perspective of one of ordinary skill in the art in view of the disclosure and any other evidence of record . . . that is probative of the applicant's assertions." (M.P.E.P. 2107 II (B) (1) (ii)) Such standard is presumptively satisfied unless the logic underlying the assertion is seriously flawed, or if the facts upon which the assertion is based are inconsistent with the logic underlying the assertion (Revised Interim Utility Guidelines Training Materials, 1999).

Proper Application of the Legal Standard

Applicants submit that the microarray data provided in the present application is sufficient to establish a credible, specific and substantial utility for PRO3301 polypeptides identified as SEQ ID NO:4. Furthermore, it is Applicants belief that the "universal normal control" described in EXAMPLE 13, is a reliable negative control and is predictive of normal expression levels found in healthy tissues of the same tissue type as the cancerous tumors examined. As such, microarray studies utilizing a "universal normal control" serve as a predictive indicator of overexpression or upregulation of gene expression in cancerous tumors. Applicants would like to draw the Examiner's attention to the fact that parallel studies were concurrently conducted, wherein the microarray analysis of the test sample was compared to expression levels exhibited in a control sample using normal healthy cells representative of the same tissue type as the cancerous samples examined. In this regard, these parallel studies compared the expression levels of PRO3301 polypeptide-encoding nucleic acid sequences in: (1) non-small cell lung adenocarcinoma versus normal lung tissue controls, (2) lung squamous cell carcinoma versus normal lung tissue controls, and (3) colorectal adenocarcinoma versus normal colorectal tissue controls. These contemporaneous studies demonstrated that compared to their normal healthy tissue counterparts, PRO3301 polypeptide-encoding nucleic acid sequences showed, on average, a 2.4 fold, 9.2 fold, and 5.3 fold increase in expression levels in non-small cell lung adenocarcinomas, lung squamous cell carcinomas, and colorectal adenocarcinomas, respectively. In light of the arguments and discussion above, PRO3301 polypeptides of the present invention are significantly overexpressed in specific tumor tissue(s)

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when compared to normal controls. Thus, PRO3301 polypeptide-encoding nucleic acid sequences of the present invention can be useful as diagnostic markers for non-small cell lung adenocarcinomas, lung squamous cell carcinomas and colorectal adenocarcinomas. In view of these findings, the novel PRO19598 receptor which binds to a functional PRO3301 (diagnostic marker) would likewise possess a credible, specific and substantial utility. The binding event in and of itself can serve as a useful *in vitro* diagnostic tool to detect and measure the levels of PRO3301 polypeptides in an unknown test sample wherein detected overexpression levels would be suggestive of the presence of lung and colorectal tumors. It is, of course, true that further research would be needed to develop a diagnostic product. However, the fact that such follow-up tests might be necessary, cannot properly lead to the legal conclusion that either PRO3301 or PRO19598 polypeptides or their corresponding encoding nucleic acids lack patentable utility.

As set forth in M.P.E.P., 2107 II (B) (1), if the Applicant has asserted that the claimed invention is useful for any particular purpose, and the assertion would be considered credible by a person of ordinary skill in the art, a rejection based on lack of utility should not be imposed. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the present rejection under 35 U.S.C. §101.

Objections and Rejections under 35 U.S.C. §112, First Paragraph

(1) Claims 22-41 stand rejected under 35 U.S.C. §112, first paragraph as allegedly not being supported by either a credible, specific and substantial asserted utility or a well established utility so that one skilled in the art would not know how to use the claimed invention. Without necessarily agreeing with the propriety of the rejection, Applicants have herein canceled Claims 1-52 rendering the rejection of Claims 22-41 under 35 U.S.C. §112, first paragraph in the instant Office Action moot. Accordingly, Applicants respectfully request that the outstanding rejection of Claims 22-41 under 35 U.S.C. §112, first paragraph be withdrawn.

(2) Claims 1, 5, 7 and 9-17 stand rejected under 35 U.S.C. §112, first paragraph, as allegedly, containing subject matter which was not described in the specification in such a way

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as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner further states "...only isolated polypeptides comprising the amino acid sequence set forth in SEQ ID NO:2, but not the full breadth of the claim meets the written description provision of 35 U.S.C. §112, first paragraph". Accordingly, the Examiner alleges that the specification does not provide adequate written description of the claimed genus. Applicants respectfully traverse.

In light of the amendment to the claims and the discussion above traversing the rejections under 35 U.S.C. §101, Applicants respectfully submit that the specification discloses a credible, specific and substantial utility for both PRO3301 and PRO19598 polypeptides as useful diagnostic tools for detection of lung and colorectal tumors. Applicants have herein amended the rejected genus claims to recite variant nucleic acid sequences encoding a PRO19598 polypeptide, wherein said encoded polypeptide is a receptor for and binds to the ligand polypeptide shown as SEQ ID NO:4. Accordingly, the genus claims, as amended, recite a specific utility for the claimed variant nucleic acids (i.e. said polypeptide serving as a specific receptor that binds to a functional ligand polypeptide). Since the claims are now drawn to a genus defined by both sequence and functional identity, one of ordinary skill in the art would know at the effective priority date of this application, that the Applicants were in possession of the claimed sequences. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the present rejection of the claims under 35 U.S.C. §112, first paragraph.

In light of the above amendments and remarks, Applicants believe that this application is now in condition for immediate allowance and respectfully request that the outstanding objections be withdrawn and this case passed to issue.

The Examiner is invited to contact the undersigned at (650) 225-4563 if any issues may be resolved in that manner.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

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Respectfully submitted,
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PATENT TRADEMARK OFFICE

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Version with markings to show changes made

In the Claims

Claims 1-52 have been cancelled

New Claims 53-69 have been added